

# EXHIBIT 1



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

11/377,578

03/17/2006

Jason Sterne

ALC 3229

5342

30868

7590

01/06/2009

KRAMER & AMADO, P.C.  
 1725 DUKE STREET  
 SUITE 240  
 ALEXANDRIA, VA 22314

EXAMINER

CHO, HONG SOL

ART UNIT

PAPER NUMBER

2419

MAIL DATE

DELIVERY MODE

01/06/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

11/377,578

**Applicant(s)**

STERNE ET AL.

**Examiner**

Hong Cho

**Art Unit**

2419

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Application/Control Number: 11/377,578  
Art Unit: 2419

Page 2

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the amendment filed on 12/05/08. Claims 1-36 are pending in the instant application.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-18 and 20-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradford et al (US 20050185581), hereinafter referred to as Bradford in view of Gupta et al (US 7408876), hereinafter referred to as Gupta.

Re claims 1, 9, 17, 18, 21 and 29, Bradford discloses monitoring a depth of a queue in the queuing device, the queue for receiving packets from an upstream device within the network device, the queuing device acting as a discard point by discarding packets when the queue is full(claim 1), but fails to disclose, if the depth passes a predetermined threshold, sending a message to the upstream device to reduce a rate at

Application/Control Number: 11/377,578

Page 3

Art Unit: 2419

which packets are sent to the queuing device to prevent the queue from filling and thereby preventing packet discarding and loss by the queuing device. Gupta discloses, when an egress queue exceeds the upper queue threshold, the egress queue manager generates congestion messages to the ingress queue manager to cause the ingress queues responsible for causing the congestion to slow down the rates at which packets are dequeued to the congested egress queues (column 6, line 60 to column 7, line 15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Bradford with the teaching of Gupta in implementing backpressure algorithm for the benefit of providing efficient utilization of queues as suggested by Bradford.

Re claims 2, 10, 22 and 30, Bradford discloses increasing the rate at which packets are sent to the queuing device if the depth drops below the predetermined threshold, sending a message to the upstream device (paragraph [0008]).

Re claims 3, 11, 23 and 31, Bradford discloses sending a message reporting the depth of the queue to the upstream device to thereby enable the upstream device to determine whether to reduce or increase the rate at which it sends packets to the queuing device (claim 3).

Re claims 4, 12, 24 and 32, Bradford discloses comparing a rate at which packets enter the queuing device to a rate at which packets exit the queuing device (paragraph [0007]).

Re claims 5, 13, 25 and 33, Bradford discloses the network device is a router, switch, or gateway (figure 8, element 910).

Application/Control Number: 11/377,578  
Art Unit: 2419

Page 4

Re claims 6, 7, 14, 15, 20, 26, 27, 34 and 35, Bradford discloses a queuing device is a network processor or traffic manager (claim 7).

Re claims 8, 16, 28 and 36, Bradford discloses the packets are at least one of Internet Protocol ("IP") packets, multiprotocol label switching ("MPLS") packets, asynchronous transfer mode ("ATM") packets, and frame relay packets (paragraph [0031]). Routers route IP packets.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bradford in view of Gupta and further in view of Assa et al (US 20020163885), hereinafter referred to as Assa.

Re claim 19, Bradford discloses all of the limitations of the base claim, but fails to disclose implementing the system with a field programmable gate array (FPGA) within the network device. Assa discloses implementing in a logic gate system such as ASIC or FPGA (paragraph [0010]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Bradford with the teaching of Assa in implementing the system with a field programmable gate array (FPGA) within the network device for the benefit of limiting cost and complexity and increasing processing speed.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Application/Control Number: 11/377,578  
Art Unit: 2419

Page 5

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hong Cho/

Hong Cho  
Primary Examiner, Art Unit 2419  
12/31/2008